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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,367	04/12/2001	Shimen K. Claxton	12-1147	3126

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EXAMINER	
MEHRA, INDER P	
ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 05/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/833,367	CLAXTON ET AL.	
	Examiner	Art Unit	
	Inder P. Mehra	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-7,11-17 and 20-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-7,11-17 and 20-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to amendment dated: 11/24/04. Based on this amendment, claims 1, 8-10, and 18-19 have been cancelled and, therefore, claims 2-7, 11-17 and 20-23 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2, 6-7, 11, 17 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Arnold et al** (US Patent No. 5,475,677), hereinafter, Arnold , in view of **Koshi et al** (US Patent No. 5,414,527), hereinafter, Koshi.

For claims 2, 11, 17 and 20-21, Arnold discloses a time multiplexed multiple carrier transmitter, refer to col. 2 lines 12-24 and col. 5 lines 50-55; comprising:

- a first data encoder (605 and 607 in fig. 6) for producing first transmit data, refer to col. 13 lines 15-22;
- a second data encoder for producing second transmit data, 605 and 607 in fig. 6, and "multiplexed radio links" and "a number of portables (number of encoders-one in each portable) to simultaneously access a single port on a multiplexed basis", refer to col. 2 lines 12-18;
- a digital multiplexer coupled to the first and the second data encoder (607 in fig. 6), and "a number of portables (number of encoders-one in each portable) to

simultaneously access a single port on a multiplexed basis", refer to col. 2 lines 12-18;

- a power amplifier 611 in fig. 6, refer to col. 13 lines 35-40;
- a transmit frequency upconverter coupled between the transmit signal output and the power amplifier, refer to "the front end circuitry 300 upconverts the IF frequency—RF carrier ---the amplified--- power amplifier 611", refer to col. 13 lines 34-40;
- a multiplexer control circuit (microcontroller 602 in fig. 6) coupled to the digital multiplexer (607 in fig. 6) through a multiplexer control input (uc), ---select between the first and second data encoders (selecting a channel, refer to col. 9 lines 5-10, "a number of portables (number of encoders-one in each portable) to simultaneously access a single port on a multiplexed basis", refer to col. 2 lines 12-18);
- and according to a predetermined transmit schedule (appropriate time), refer to col. 12 lines 58-60 and col. 13 lines 25-50.

Arnold does not disclose expressly the following limitations, which are disclosed by Koshi, as follows:

- wherein the predetermined transmit schedule selects the first data encoder more frequently than the second data encoder to deliver a predetermined target power, **as recited by claim 2, 11, and 20** (the selector 8 selects the encoder 4a when the tone varies greatly whereas the selector 8 selects the encoder 4c when the tone shows a smooth gradient. As will be described later, with respect to the resolution information, encoding is executed in such a manner that the encoding is performed more frequently on the side of the encoder 4a which performs the block truncation

encoding of single tone level and the encoding is performed less frequently on the side of the encoder 4c which performs the block truncation encoding of n tone levels **(predetermined target power)**, refer to col. 6 lines 27-51).

- further comprising applying at least three channels of transmit data to the digital multiplexer and wherein digitally multiplexing comprises digitally multiplexing between the first, second and at least third transmit data under control of the multiplexer control signal to generate a transmit signal, **as recited by claims 17, and 21, refer to fig. 1, col. 6 lines 27-51)**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "wherein the predetermined transmit schedule selects the first data encoder more frequently than the second data encoder to deliver a predetermined target power", and "digital to analog converting the transmit signal". The capability can be combined at the transmitter. The suggestion/motivation to do so would have been to perform frequency conversion for digitally adaptive systems.

For claims 6-7, Arnold discloses the subject matter including the following limitations:

- a third/ fourth data encoder, ***as recited by claims 6 and 7***, for producing third transmit data (digital channels and number of portables, col. 2 lines 10-15), the third data encoder coupled to the digital multiplexer, and the multiplexer control signal selecting one of the first, second and third data encoders according to the predetermined transmit schedule, (refer to ***"multiplexed radio links---allow a number of portables (transmit data---access a single port on multiplexed basis)"***, col. 2

lines 10-15; (controlling scheduling, refer to col. 12 lines 55-60 and col. 13 lines 25-50.

4. Claims 3-4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Arnold et al**, hereinafter, Arnold , in view of **Koshi et al** (US Patent No. 5,414,527), hereinafter, Koshi.,as applied to claims 2 and 11 above, and further in view of **Judd et al** (US Patent No. 6,701,137), hereinafter, Judd.

For claims 3-4, 12-14, Arnold and Koshi disclose all the limitations of subject matter of these claims except the following limitations, which are disclosed by Judd, as follows:

- "a digital to analog converter coupled between the digital multiplexer and the transmit frequency upconverter", **as recited by claim 4,** refer to fig. 28, 26 and 30 in fig. 1.
- omprising a digital to analog converter coupled between the transmit frequency upconverter and the power amplifier, **as recited by claim 3;**
- wherein frequency upconverting comprises digital frequency upconversion to provide an upconverted signal,**as recited by claim 12,** refer to 30 in fig. 1.
- "digital to analog converting the transmit signal", **as recited by claims 13-14,** refer to 28 in fig. 1.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "a digital to analog converter coupled between the digital multiplexer and the transmit frequency upconverter", and "digital to analog converting the transmit signal". The capability can be combined at the transmitter. The suggestion/motivation to do so would have been to perform frequency conversion for digitally adaptive systems.

5. Claims 5, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Arnold et al**, hereinafter, Arnold in view of **Koshi et al** (US Patent No. 5,414,527), hereinafter, Koshi. as applied to claims 2 and 11 above, and further in view of **Martone et al** (US Patent No. 6,603,806), hereinafter,Martone.

For claims 5, 15, and 16, Arnold and Koshi disclose all the limitations of subject matter of these claims with the exception of the following limitations, which are disclosed by Martone, as follows:

- encoders includes a first intermediate frequency upconverter, refer to fig. 7, refer to col. 6 lines 42-60.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of "a digital to analog converter coupled between the digital multiplexer and the transmit frequency upconverter", and "digital to analog converting the transmit signal". The capability can be combined at the transmitter. The suggestion/motivation to do so would have been to perform frequency conversion for digitally adaptive systems.

6. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Arnold et al**, hereinafter, Arnold , in view of of **Koshi et al** (US Patent No. 5,414,527), hereinafter, Koshi.,as applied to claims 2 and 11 above, and further in view of **Fujiki et al** (US Patent No. 6,847, 807), hereinafter, Fujiki.

For claims 22-23, Arnold and Koshi disclose all the limitations of subject matter of these claims except the following limitations, which are disclosed by Judd, as follows:

- The time multiplexed multi-carrier signal selector of claim 20, further comprising a first intermediate frequency upconverter coupled to the first transmit data input and the intermediate frequency control output, **as recited by claims 22-23, refer to col. 5 lines 1-8, and figs. 1-2.**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the capability of the time multiplexed multi-carrier signal selector of claim 20, further comprising a first intermediate frequency upconverter coupled to the first transmit data input and the intermediate frequency control output. The capability can be combined at the transmitter. The suggestion/motivation to do so would have been to perform frequency conversion for digitally adaptive systems.

Response to Arguments

7. Applicant's arguments with respect to claims 2-7, 11-17 and 20-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Inder P. Mehra whose telephone number is 571-272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Inder Pal Mehra

Inder P Mehra
Examiner
Art Unit 2666

5/2/05